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ABSTRACT

A study examined the differences between 17 children with language disorders and 20 children with normal language development (ages 9-11) in the way they developed shared knowledge with an adult using an interactive communication task. The structure interaction map task involved the child describing a route through a simple schematic map to an adult who had a similar map, but without a route. Subjects were informed that the listener's map was slightly different from their map and they could not view the listener's copy. Five maps were used with a number of pictorial features relevant to describing the route. For each map, the adult introduced questions about features that were nonexistent on the subjects' map. Results found that there was a significant difference in the verbal productivity between the group of children with normally developing language and those evidencing language disorders. No significant differences were found in the number of conversational turns attempted, the number of features named, or the expansions. Using a discriminant function analysis, however, 71 percent of the children with language disorders could be correctly classified based on performance on the 4 variables of expansions, features named, words spoken, and conversational turns. (Contains 12 references.) (CR)

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THE LANGUAGE OF NEGOTIATION:

Comparing Children with Language Based Learning Disabilities and Children with Normally Developing Language

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For effective communication to occur in conversation, speakers must share enough knowledge to understand each other's contributions; they must achieve mutual knowledge (Clark and Marshall, 1981; Anderson, Clark and Mullin, 1991). Children evidencing language disorders have been found to be deficient in negotiation of shared knowledge with other speakers, including a tendency to be less likely to seek more information in the presence of message inadequacy, less likely to request clarification, less likely to provide enough information for task completion, and less proficient in monitoring message adequacy (Brinton, Fujiki and Sonnenberg, 1988; Donahue and Bryan, 1983; Meline and Brackin, 1987).

It is the purpose of this study to examine the differences between children evidencing language disorders and those with normal language development in the way they develop shared knowledge with an adult using an interactive communicative task which has seen considerable use in developmental studies of referential communication and interactive skills (Anderson et al., 1991).

The structured interaction map task initially developed by Brown et al. (1984) involves a speaker describing a route through a simple schematic map to a listener who has a similar map but without a route. In the present study the child described the route and an adult served as the other dyad member. Subjects were informed that the listener's map was slightly different than their map and they could not view the listener's copy. There were five maps used with a number of pictorial features relevant to describing the route. For each map the adult introduced questions about features that were nonexistent on the subjects' map (e.g. "Do I go near the ice cream store?"). A standard procedure was used to introduce the same number of features at set points in the task for each subject.

Two independent judges rated the subjects' responses to the referential discrepancies as to expanding upon the features, therefore discovering the differences between the maps. In addition, verbal productivity, the number of conversational turns, and the number of features named across all five maps were calculated.

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Data analysis indicated that there was a significant difference in the verbal productivity between the group of children with normally developing language and those evidencing language disorders ($t = 2.29$; $p < .05$); no significant differences were found in the number of conversational turns attempted, the number of features named, or the expansions. In spite of notable mean differences between the groups, the large variability, especially in the normal group, contributed to masking these mean differences. However, using a discriminant function analysis, 75% of the children evidencing language disorders could be correctly classified based on performance on the four variables of expansions, features named, words spoken, and conversational turns. The first three variables contributed the most to correct identification of the children evidencing language disorders. These results suggest that the clinical population in this study was able to consistently participate in the shared conversation, but that the quality and quantity of the participation was characterized by utterances lacking specificity and sufficient information necessary to fully address meaning differences between the participants. Further analysis of the data is in progress.

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THE LANGUAGE OF NEGOTIATION

Comparing Children with Language Based Learning Disabilities and Children with Normally Developing Language

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For effective communication to occur in conversation, speakers must share enough knowledge to understand each other's contributions; they must achieve mutual knowledge (Clark and Marshall, 1981; Anderson, Clark and Mullin, 1991). Children evidencing language disorders have been found by some researchers to be deficient in negotiation of shared knowledge with other speakers, including a tendency to be less likely to seek more information in the presence of message inadequacy, less likely to request clarification, less likely to provide enough information for task completion, and less proficient in monitoring message adequacy (Brinton, Fujiki and Sonnenberg, 1988; Donahue and Bryan, 1983; Meline and Brackin, 1987). While this line of research has been instructive, due to the time involved in analyzing continuous speech and the fact that much of the research was conducted in the 1980's with dated technological support, much of the research has been conducted with a small number of subjects (e.g. under 10) leaving some to conclude that we lack sufficient normative data to render much of the discourse research other than equivocal (McCabe, 1996).

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The purpose of this study is to examine the differences between 17 children evidencing language disorders and 20 children with normal language development in the way they develop shared knowledge with an adult using the MAPS task, an interactive communicative task which has seen considerable use in developmental studies of referential communication and interactive skills in Scotland (Anderson et al., 1991).

Subjects for this study were recruited from several rural elementary schools in Colorado. The schools were comprised of fewer than 200 students, primarily of Caucasian ethnicity and middle socio-economic status. The average age of the children with normally developing language was 10.6 with a range of 8.6 to 13.2; the average age of the children evidencing language impairment was 10.9 with a range of 8.4 to 12.10. Children were matched for chronological age and Performance IQ based on the Test of Nonverbal Intelligence-2 (Brown, Sherbenou, and Johnsen, 1990). The average Performance IQ for the children with normally developing language was 108.8, and for the children evidencing language impairments, 101.5 (SEM = 3.5). The average Language Age for the subjects was assessed using either the Test of Language Development-2 (Newcomer and Hammill, 1988) or the Clinical Evaluation of Language Fundamentals-R (Semel, Wiig, and Secord, 1987). The average Language Age for children with normally developing language was a standard score of 102.8 and for children evidencing language impairments, 76.7 (mean score = 100; standard deviaion = 15).

All subjects spoke English as their native language, and no subject exhibited demonstrable neurological abnormalities or psychomotor deficits. 7 of the normal subjects were boys while 13 were girls; 12 of the subjects evidencing language disorders were boys while 5 were girls.

The MAPS task is a structured interaction task initially developed by Brown et al. (1984) and involves a speaker describing a route through a simple schematic map using pictures as points of reference along the route. The speaker describes the route to a listener who has a map with the pictorial reference points but without a drawn route. In the present investigation, the child described the route and an adult served as the other dyad member. Subjects were informed that the listerer's map was slightly different than their map and they could not view the listener's copy. There were five maps used with a number of pictorial features relevant to describing the route. While the child was describing the route, the adult introduced preset questions during the task about features that were nonexistent on the subjects' map (e.g. "Do I go near the ice cream store?"). A standard procedure was used to introduce the same questions to the children at the same points in the discourse.

The discourse between the child and adult was audio-taped and tapes were transcribed. From each of the discourses, total productivity

was calculated (i.e. total words spoken by each child, summed across each group) as well as the number of conversational turns (i.e. initiations or responses) for each child, summed across each group. Conversational turns were identified as either an opening, answering, or follow-up utterance, as defined by Burton (1981). In addition, the number of features named by each child was calculated and summed across each group. This measure was the number of times a child named a pictorial reference point on the map as part of describing the route. Finally, the number of expansions was calculated. Expansions were defined as adding accurate information to a previous utterance following one of the preset questions introduced by the adult.

Data were analyzed descriptively and subjected to statistical analysis. Mean differences are reported below. Data analysis indicated that there was a significant difference in the verbal productivity between the group of children with normally developing language and those evidencing language disorders ($t = 2.29$; $p < .05$); no significant differences were found in the number of conversational turns attempted, the number of features named, or the number of expansions. In spite of notable mean differences between the groups, the large variability, especially in the normal group, contributed to masking these mean differences. However, using a discriminant function analysis, 75% of the children

evidencing language disorders could be correctly classified based on performance on the four variables of expansions, features named, words spoken, and conversational turns. The first three variables accounted for the most variance between the groups and thus contributed the greatest influence to correctly identifying which children were developing language normally versus those evidencing language impairments, based on discourse features.

Descriptive Statistics

	Group	N	Mean	Std. Dev.
Expansion	Normal	20	38.75	49.49
	LD	17	27.06	20.33
Words	Normal	20	802.15	531.85
	LD	17	485.06	285.43
Turns	Normal	20	36.65	4.18
	LD	17	39.00	5.83
Features	Normal	20	82.25	58.45
	LD	17	57.88	14.02

Discriminant Function Analysis

Group	N	Predicted Group Membership	
		Normal	LD
Normal	20	60%	40%
LD	17	25%	75%

The results suggest that the clinical population in this study was able to consistently participate in shared conversation as evidenced by the comparable number of conversational turns taken by children in both groups. However, the language impaired group evidenced greater verbal productivity per conversational turn, more expansions and named more features on the maps than the group of children evidencing language impairments such that a child's performance in these areas predicted his/her membership as language impaired or not, 75% of the time. However, extensive variability, especially in the normal sample, masked the significance of group differences. Thus, while the quality and quantity of participation of children in the language impaired group was characterized by utterances lacking specificity and sufficient information necessary to fully address meaning differences between the participants, the variables measured represent such wide variability so as to obscure group differences.

It is important to understand why children evidencing language disorders have difficulty sharing meaning with their conversational partners so that informed remedial efforts can be undertaken. Identifying productivity, expansion of information based on questions from conversational partners, and features named in an interchange taking place around a concrete referent as variables on which the two groups differ, is helpful for designing intervention programs. However, wide variability in performance was a characteristic of the normal group in this study, as in previous studies, such that more extensive normative data need be collected.

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